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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/911,614	07/25/2001	Takeshi Kouno	520.40206X00	3460

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EXAMINER

GRAY, MICHAEL KUHN

ART UNIT	PAPER NUMBER
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3746

DATE MAILED: 11/03/2003

11

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/911,614

Applicant(s)

KOUNO ET AL.

Examiner

Michael K. GRAY

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2,3,5-11 and 13-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2,3,5-11 and 13-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☒ Interview Summary (PTO-413) Paper No(s). 11.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.                      6) ☐ Other:

## **DETAILED ACTION**

### ***Background***

On September 21, 2003, the applicants filed an Amendment After Final Rejection that incorporated many of the suggestions made by the examiner in the Office Action of July 1, 2003 (paper # 8). After receiving the Amendment, the examiner had a conference with his supervisor as is indicated in the attached interview summary.

Subsequent to the interview, the examiner uncovered art which is being applied in the present Office Action. Accordingly, the Amendment filed September 21, 2003 has been entered and the finality of the Office Action of July 1, 2003 is being withdrawn. In light of the above circumstances, the present Office Action is being made non-final.

### ***Prior Art References in Specification***

Applicants are reminded the listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." The examiner is citing the patents referenced by the applicants in the specification on the attached form 892. However, in future applications, the applicants should provide an information disclosure statement for prior art that is to be considered.

### ***Drawings***

The drawings are objected to in that elements identified by reference numerals 2 and 3 should be provided with lead lines which clearly identify the element in the drawing. If underlining of reference numerals is to be used, the underlined reference numeral should be placed on the identified element. See, 37 C.F.R. 1.84(q). All the drawing figures should be reviewed for proper compliance with the rules. Further, all claimed elements and parts thereof should be identified with a reference numeral which has been depicted in the drawings and described in the specification. For example, the claimed "end plate" of claim 5 is not identified by a reference numeral in the drawings.

### ***Specification***

The specification is objected to in that each claimed element and part thereof has not been described in the specification with a corresponding reference numeral which has been depicted in the drawings. For example, in claim 5, the claimed "end plate" is not described in the specification with a reference numeral which is depicted in the drawings. At page 10, line 11 of the specification, no reference numeral is associated with the stated "end plate". Claim 5 claims a bore, but the bore which is claimed is not readily identifiable in the specification. Page 9, line 28 of the specification describes a "retainer insertion portion 6a". The specification should probably be amended to recite a "retainer insertion portion or bore 6a" to render more clarity to the claims.

***Claim Objections***

Claim 5 is objected to for the reason that the claimed "end plate" and "bore" provided therein have not been described in the specification and identified in the drawings with respective corresponding reference numerals. In claim 5, the words "a bore provided the end plate" should be changed to --a bore provided in the end plate--.

In claim 13, the signatory authority brought to the examiner's attention that the claimed spherical portion of the valve is not really spherical. Accordingly, correction should be made to the claim and to the specification at page 10, line 22.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 2-3, 5-11, and 13-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Lorson (4,543,989).

Lorson discloses a compression chamber located within a cylinder 12 and above a piston 14. A discharge port above the compression chamber allows working fluid to flow out of the compression chamber. (The examiner has attached Figures 1, 2 and 3 of Lorson to the end of this Office Action and has identified applicable elements).

A valve seat portion 36 is provided around the discharge port in a coaxial arrangement. The valve seat has a tapered surface so that a cross-sectional area of the discharge port increases in a direction away from the compression chamber.

A valve 42 has a projection portion having a tapered surface--only a portion of which in a closed position is in contact with the valve seat. The valve 42 has a flat surface portion 80 on the side of the compression chamber. An end plate blocks an opening of the cylinder with the discharge port being defined thereby. The tapered valve seat can be considered an upper portion of the end plate with a bore being defined by the end plate. A retainer 40 is inserted into the bore for holding the valve opposed to the valve seat portion. The retainer includes an opening through which the working fluid is discharged. The discharge port has a cylindrical portion located between the compression chamber and valve seat portion. A discharge gas passage 34 is located between the retainer and the inner side surface of the bore. A spring or biasing means 44 biases the valve 42 toward a closed position so as to contact the valve seat portion. The biasing means is a leaf spring 44 having coiled layers and formed into a bowl-like or conical shape. The valve 42 has a spherical portion and a conical portion. In a closed position, a portion of the tapered conical surface of the valve contacts the tapered surface of the valve seat to form a line contact. The tapered conical portion of the valve is at an end of the valve closest to the compression chamber.

### References

The following reference is considered relevant to applicants' disclosure.

Riffe (5,346,373) discloses a compressor having a spherical discharge valve.

***Communication***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Gray whose telephone number is (703) 308-6196.


If the examiner does not answer the phone, a message will be provided as to when he will be in the Office. A message may be left on the examiner's voice mail.

The examiner's supervisor Justine Yu can be reached at (703) 308-2675.

The Official Fax number is (703) 872-9306.

Any inquiry of a general nature should be directed to the receptionist whose telephone number is (703) 308-0861.

<sup>mkj.</sup>  
**/Michael K. Gray**  
**Patent Examiner**  
Art Unit 3746

  
**JUSTINE R. YU**  
**PRIMARY EXAMINER**